followed by mandatory 90-day (36.85%, 35.51%) and 30-day retail program (33.73%, 32.41%) in both claims level and patient level, respectively. However, only the GDR differences between voluntary 90-day retail program and 30-day retail program were found to be statistically significant for all three therapeutic classes at both claim and patient level ($P < 0.05$). **CONCLUSION:** The study showed comparable results indicating that there were no drastic difference in the utilization of generic drug by claims and patients between mandatory 90-day retail program and 30-day retail program. However, voluntary 90-day retail program showed a significantly higher share of generic utilization than 30-day retail program.

PHP17

PREVALENCE OF CLINICALLY IMPORTANT POTENTIAL DRUG-DRUG INTERACTIONS IN REGIONE EMILIA ROMAGNA, ITALY

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OBJECTIVES: To estimate the prevalence of clinically important potential drug-drug interactions (DDIs) among residents of Regione Emilia Romagna (RER), Italy. **METHODS:** We conducted a retrospective cohort study using the 2004 outpatient prescription claims database of RER, which was linked to the 2004 demographic file of 4,222,165 RER residents. Using a previously published list of clinically important potential DDIs as framework, we identified 11 potential DDIs that could be captured through the RER database because both drugs were reimbursed by the 2004 Italian National Formulary. A potential DDI was defined as the presence of a minimum 5-day overlap in days supply for each of the drugs in an interacting pair. The World Health Organization Anatomical Therapeutic Classification/Defined Daily Dose System was used to determine a proxy measure of days supply for each drug. The one-year prevalence of each potential DDI was quantified at the patient level. **RESULTS:** In 2004, the 11 potential DDIs occurred 7,379 times in 6,681 RER residents, yielding a one-year prevalence of 158.2 cases per 100,000 individuals. The mean age of those exposed to potential DDIs was 74.1 (SD = 10.8) years and about 52% were female. Of those exposed, 559 (8.4%) were exposed to 2 potential DDIs and 64 (1.0%) were exposed to at least 3 potential DDIs. The most commonly identified potentially interacting medication pairs were warfarin and nonsteroidal anti-inflammatory drugs (5,616 cases), theophylline/aminophylline and the fluoroquinolones ciprofloxacin and fluvoxamine (759), warfarin and barbiturates (530), and warfarin and fibric acids (339). **CONCLUSION:** To our knowledge, this is the first large population-based study in Italy documenting the prevalence of potential DDIs. A substantial number of clinically important potential DDIs were identified, particularly among warfarin users. DDIs are predictable, hence preventable. Awareness of the most commonly occurring potential DDIs can help practitioners prevent coadministration of these potentially dangerous medication combinations.

PHP18

BENEFICIARY OUT-OF-POCKET: A CROSS-SECTIONAL PILOT STUDY IN THE SAUDI MINISTRY OF HEALTH HOSPITAL OUTPATIENT CLINICS

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OBJECTIVES: To estimate the beneficiary's out-of-pocket spending to fill their prescriptions in 2003 at the Saudi Ministry of Health (MOH) hospital outpatient clinics. **METHODS:** A non-randomized sample of 19 hospitals participated in a study investigating the influence of pharmacy and therapeutics (P&T) committee and pharmacy information system (PIS) on patients' access to and utilization of prescription drugs. These hospitals were selected deliberately to represent different levels of PIS and P&T committee characteristics based on the results of a descriptive study of all 127 non-specialized MOH hospitals. Systematic sampling was used to audit 150 patients prescription papers (orders) from each hospital outpatient pharmacy. The cost estimates based on community pharmacy market price. **RESULTS:** Of 2850 audited patient records, only 202(7.1%) had a free access rate less than 100 percent and have to pay out-of-pocket. The mean of out-of-pocket spending is \$16.5 (s = 34.4)to fill prescriptions. Patients diagnosed with cardiovascular diseases or multiple diagnosis are more likely to pay out-of-pocket. Patients with chronic disease have an average of \$24.1 monthly spending and only 1.8% of them have to pay more than \$100 monthly. The spending rate is significantly correlated with non-formulary drugs (r = 0.48) and also associated with a single source brand names. **CONCLUSION:** The data revealed a high rate of free access to prescription drug for MOH beneficiaries and an acceptable (<16.5 US dollar) out-of-pocket spending for 98% of the patients who paid out-of-pocket. Although, there are multiple and alternative sources for MOH beneficiaries to avoid out-of-pocket spending, there is still vulnerable group that dose not have alternative source and might have a potential to not offered to pay out-of-pocket. MOH may use its resources and consider this group to fill their prescriptions with minimum cost by using the hospital social work program to identify this group.

PHP19

RACE AND ASSOCIATED MEDICATION ADHERENCE IN MEDICAID ENROLLED PATIENTS WITH CHRONIC DISEASE

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OBJECTIVES: Medication adherence is a major obstacle to overcome when treating chronic medical conditions. Many factors can influence how well a medication regimen is complied with, including patient demographics such as race. The aim of this study was to determine how race can affect medication adherence in Medicaid-enrolled patients with chronic disease. **METHODS:** We examined the association between race and controller medication adherence in confounder adjusted multivariate analyses on data from 3 retrospective cohorts enrolled in the North Carolina Medicaid program. These cohorts included patients with primary diagnoses of asthma (n = 710), type 2 diabetes (n = 2655), and psoriasis (n = 186). The data for these studies was extrapolated from the North Carolina Medicaid claims and eligibility files and patients were followed up for a minimum of two years. **RESULTS:** The results were mixed across disease states. In patients with type 2 we found that medication adherence rates (using medication possession ratios) for oral antidiabetics was significantly higher for whites [59%] as compared to African Americans [54%] ($p < 0.05$). Similarly, in patients with asthma, we found that African American patients were 65% less likely to have the recommended medication possession rate of at least 80% [RR: 0.35, 95% CI: 0.15–0.81]. There were no significant patient differentials in controller medication adherence by race in patients with psoriasis. **CONCLUSION:** The results were mixed across disease states. In patients with type 2 we found that medication adherence rates (using medication possession ratios) for oral antidiabetics was significantly higher for whites [59%] as compared to African Ameri-

cans [54%] ($p < 0.05$). Similarly, in patients with asthma, we found that African American patients were 65% less likely to have the recommended medication possession rate of at least 80% [RR: 0.35, 95% CI: 0.15–0.81]. There were no significant patient differentials in controller medication adherence by race in patients with psoriasis.

PHP20

IMPACT OF POLYPHARMACY MEDICATION THERAPY MANAGEMENT PROGRAM (MTMP) ON DRUG EXPENDITURES IN MEDICARE PART D POPULATION

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OBJECTIVES: To assess the impact of polypharmacy intervention on drug cost in the Medicare Part D population. **METHODS:** This is a case-control study, based on 2006 Medicare Part D population. The case group contains cases which have received Polypharmacy interventions, whereas the control group contains cases which have not been intervened upon. Per member per month (PMPM) drug savings were calculated as the difference between the projected post-intervention drug cost of the case group and the actual post-intervention drug cost of the case group. The projected post-intervention drug cost is based on the pre-post intervention percent change in the PMPM drug cost of the control group. **RESULTS:** There were 6050 Polypharmacy cases, of which 3442 were intervened on. The remainder served as the control group. The actual post-intervention PMPM drug cost for the case group was $611 and the projected post-intervention PMPM drug cost for the same group was $663, a difference of $52, representing $52 PMPM drug cost savings. **CONCLUSION:** Polypharmacy MTMP may not only help improve therapeutic outcomes through improved medication use, but may also reduce overall health cost. The present study showed significant pharmacy savings as a result of Polypharmacy intervention. This study did not address medical cost savings due to the lack of longitudinal medical claim data. However it would not be unreasonable to assume Polypharmacy intervention could significantly reduce medical cost.

PHP21

DETERMINANTS OF STATE MEDICAID PER CAPITA PRESCRIPTION DRUG EXPENDITURES: A STRUCTURE EQUATION MODELING APPROACH

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OBJECTIVES: State Medicaid programs vary drastically in terms of their prescription drug expenditure per recipient. Prior research has attempted to explain these variations by identifying potential determinants of drug expenditure. However, analyses in the past have been restricted to a few variables and several other potential determinants and their interactions have not been investigated. Objectives of this study were: a) To identify potential determinants of Medicaid per capita drug expenditures based on an established comprehensive model for health services utilization; and b) to test impacts of the identified determinants on per capita drug expenditures. **METHODS:** This study employs Andersen's Behavior Model of Health Services Utilization to identify potential determinants of pharmaceutical expenditures in state Medicaid programs using publicly available data. A structure equation model was built to test relationships among the latent constructs of policy, access, predisposing characteristics, enabling resources, and need for health care, and their influence on drug utilization. **RESULTS:** "Predisposing characteristics" were found to impact "enabling resources" which, in turn, was found to significantly impact drug utilization. Among the observed variables, "access to hospitals" and "access to primary care physicians" significantly described "health care resources"; "risk of diseases" described "need for health care"; and "poverty" described the latent construct of "enabling resources". The "policy" construct was not described adequately by the indicator variables. **CONCLUSION:** Based on the study results, we conclude that Medicaid policy and program interventions, as described in this model, do not influence drug costs significantly. Population characteristics like predispositions and enabling resources determine drug costs in the state Medicaid programs.

PHP22

HEALTH REIMBURSEMENT ACCOUNT BASED CONSUMER DRIVEN HEALTH PLANS: THEIR IMPACT ON MEDICAL UTILIZATION, PHARMACY UTILIZATION AND EXPENDITURES

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OBJECTIVES: To examine the impact of consumer driven health plans (CDHPs) on pharmacy and medical utilization, health care and pharmacy expenditures. **METHODS:** We utilized enrollment, medical and pharmacy claims data from a national employer who switched from offering a traditional PPO based plan (i.e., the "pre" period in 2004) to only offering CDHP options to their employees in 2005 (i.e., the "post" period). Patients with select chronic diseases including diabetes and asthma were included for analyses. Outcomes measured included total number of prescriptions, disease based medication adherence (estimated by the Medication Possession Ratio (MPR) with 80% or higher classified as being "adherent"), ER, inpatient and outpatient visits and pharmacy and health care expenditures. GEE (Generalized Estimating Equations) for repeated measures were used because there are 2 correlated observations on each subject in the dataset adjusting for age, gender, co-morbid risk scores, family size, coverage status and migration patterns between the CDHP options. Outcomes variables that were characterized by a large proportion of 0s and extreme right skew were analyzed using two-part models with logarithmic transformation of the non-zero observations and a smearing re-transformation. **RESULTS:** Preliminary results show that for CDHP switchers there was a reduction in most measures: outpatient visits reduced by 22%, total number of prescriptions decreased by 25%, medical and pharmacy expenditures reduced by 22% and 24% respectively. Individuals were 37% less likely to be adherent with their drug therapy across all disease states in a CDHP compared to their adherence in a PPO plan. There were no appreciable differences in ER and inpatient visits. **CONCLUSION:** Switching to a CDHP resulted in lower utilization of some services and expenditures. Switching was also associated with decrease influenced by CDHP benefit design. CDHPs can be a useful plan offering but plans should design interventions to improve medication adherence.

PHP23

A NATIONAL SURVEY ON PRESCRIBERS' KNOWLEDGE OF AND THEIR SOURCE OF DRUG-DRUG INTERACTION INFORMATION

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